Table 2-H-19
Los Angeles to San Diego via Inland Empire High-Speed Train Alignment Evaluation Matrix
Los Angeles Union Station to March Air Reserve Base

Alignment = Alignment Carried Forward **Alignment** = Alignment Eliminated = Primary or Secondary Reason for Elimination

Evaluation Criteria	Los Angeles Union Station to March Air Reserve Base						
	UPRR Colton Line	**UPRR Riverside Line**	**I-10**	**SR-60**	**BNSF Fullerton Line /SR-91**	**UPRR Colton/ San Bernardino**	**UPRR Riverside/ UPRR Colton**
Maximize Ridership/Revenue Potential.							
Travel Time	28.5 minutes	46.0 minutes	43.4 minutes	37.4 minutes	52.2 minutes	36.4 minutes	31.0 minutes
	5	**2**	**3**	**4**	1	**4**	**5**
Length	66.8 miles (107 km)	67.9 miles (109 km)	63.8 miles (103 km)	62.9 miles (101 km)	70.2 miles (113 km)	73.6 miles (118 km)	67.5 miles (109 km)
	4	**3**	**5**	**5**	**2**	1	**4**
Population/ Employment Catchment	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Maximize Connectivity and Accessibility.							
Intermodal Connection	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Minimize Operating and Capital Costs							
Length	66.8 miles (107 km)	67.9 miles (109 km)	63.8 miles (103 km)	62.9 miles (101 km)	70.2 miles (113 km)	73.6 miles (118 km)	67.5 miles (109 km)
	4	**3**	**5**	**5**	**2**	1	**4**
Operational Issues	Speed restrictions at curves and urban environment, average speed 142 mph (228 kph)	Speed restrictions at curves and urban environment, average speed 130 mph (209 kph).	Speed restrictions at curves and urban environment, average speed 92 mph (148 kph).	Speed restrictions at curves and urban environment, average speed 107 mph (172 kph).	Speed restrictions at curves and urban environment, average speed 86 mph (138 kph).	Speed restrictions at curves and urban environment, average speed 129 mph (208 kph).	Speed restrictions at curves and urban environment, average speed 131 mph (211 kph)
	5	**4**	**2**	**3**	1	**4**	**5**

Evaluation Criteria	Los Angeles Union Station to March Air Reserve Base						
	UPRR Colton Line	**UPRR Riverside Line**	**I-10**	**SR-60**	**BNSF Fullerton Line /SR-91**	**UPRR Colton/ San Bernardino**	**UPRR Riverside/ UPRR Colton**
Construction Issues	Construction in an urban environment, relocating and maintaining existing railroad operations	Construction in an urban environment, relocating and maintaining existing railroad operations	Construction in an urban environment, relocating and maintaining freeway access and capacity	Construction in an urban environment, relocating and maintaining freeway access and capacity	Construction in an urban environment, relocating and maintaining existing railroad operations	Construction in an urban environment, relocating and maintaining existing railroad operations	Construction in an urban environment, relocating and maintaining existing railroad operations
	3	**3**	1	1	**2**	**3**	**3**
Capital Cost							
	5	**4**	**3**	**3**	**4**	**5**	**5**
Right-of-Way Issues/Cost	Uses existing railroad ROW that have limited widths, may require relocation of existing railroad operations.	Uses existing railroad ROW that have limited widths, may require relocation of existing railroad operations.	Freeway ROW is very constrained with very little available width. ROW acquisition is likely to be a major issue.	Freeway ROW is very constrained with very little available width. ROW acquisition is likely to be a major issue.	Freeway ROW is very constrained with very little available width. ROW acquisition is likely to be a major issue. Uses existing railroad ROW that have limited widths, may require relocation of existing railroad operations.	Uses existing railroad ROW that have limited widths, may require relocation of existing railroad operations.	Uses existing railroad ROW that have limited widths, may require relocation of existing railroad operations.
	4	**4**	**3**	**3**	**3**	**2**	**4**

Evaluation Criteria	Los Angeles Union Station to March Air Reserve Base						
	UPRR Colton Line	**UPRR Riverside Line**	**I-10**	**SR-60**	**BNSF Fullerton Line /SR-91**	**UPRR Colton/ San Bernardino**	**UPRR Riverside/ UPRR Colton**
Maximize Compatibility with Existing and Planned Development							
Land Use Compatibility and Conflicts	• Local Parks: 11 • Schools: 16 • Regional Parks: Box Springs Mtn. • Regional Hospital: 2 • Major Public Facilities: LA County Jail & El Monte Courts • Military Uses: None • Historical Sties: San Gabriel Mission • University: UC – Riverside • Regional Shopping: Mariachi Plaza • Cemetery: None	• Local Parks: 10 • Schools: 9 • Regional Parks: Santa Ana River Wildlife Area • Regional Hospital: 1 • Major Public Facilities: LA County Jail & Lanterman Center • Military Uses: None • Historical Sites: None • University: UC-Riverside • • Regional Shopping: None • Cemetery: None	• Local Parks: 10 • Schools: 19 • Regional Parks: Bonelli Regional • Regional Hospital: 4 • Major Public Facilities: West Covina Courthouse • Military Uses: None • Historical Sties: None • University: CSU Pomona & LA • Regional Shopping: Montclair/W Covina • Cemetery: Forest Lawn	• Local Parks: 15 • Schools: 20 • Regional Parks: None • Regional Hospital: None • Major Public Facilities: LA County Jail • Military Uses: None • Historical Sites: Jurupa Cultural Ctr. • University: None • Regional Shopping: Puente Hills • Cemetery: Calvary Cemetery	• Local Parks: 17 • Schools: 13 • Regional Parks: Chino Hills State; Featherly Regional • Regional Hospital: 2 • Major Public Facilities: LA County Jail & Cal. Youth Authority • Military Uses: None • Historical Sites: None • University: Cal Baptist: UCA • Regional Shopping: None • Cemetery: Olivewood Cemetery	• Local Parks: 14 • Schools: 21 • Regional Parks: Box Springs Mtn. • Regional Hospital: 2 • Major Public Facilities: LA County Jail & El Monte Courthouse • Military Uses: None • Historical Sites: San Gabriel Mission • University: UC – Riverside • Regional Shopping: Mariachi Plaza • Cemetery: None	• Local Parks: 11 • Schools: 16 • Regional Parks: Box Springs Mtn. • Regional Hospital: 2 • Major Public Facilities: LA County Jail & El Monte Courts • Military Uses: None • Historical Sties: San Gabriel Mission • University: UC – Riverside • Regional Shopping: Mariachi Plaza • Cemetery: None
	3	**4**	**4**	**3**	**2**	**3**	**4**

Evaluation Criteria	Los Angeles Union Station to March Air Reserve Base						
	UPRR Colton Line	**UPRR Riverside Line**	**I-10**	**SR-60**	**BNSF Fullerton Line /SR-91**	**UPRR Colton/ San Bernardino**	**UPRR Riverside/ UPRR Colton**
Visual Quality Impacts	Factors: • 60% Aerial or Trench • 30 % At-grade • 3 historic and cultural sensitivity (special features) • 5 parks/ landscape features • Predominantly Industrial/ Commercial • Visual Assessment for community compatibility = medium • Visual Assessment by Rider = low visual appeal	Factors: • 30% Aerial or Trench • 70 % At-grade • 2 Historic and Cultural features • 12 parks/ landscape features • Predominantly Industrial • Visual Assessment for Community compatibility = medium • Visual Assessment by Rider = medium visual appeal	Factors: • 100% Aerial • 0 Historic and Cultural features • 9 parks/ landscape features • Predominantly Industrial/ Commercial • Visual Assessment for Community compatibility = medium/high • Visual Assessment by Ride r= low appeal	Factors: • 100% Aerial • 1 Historic and Cultural features • 16 parks/ landscape features • Predominantly commercial • Visual Assessment for Community compatibility = medium • Visual Assessment by Rider = medium/ high appeal	Factors: • 40% Aerial or Trench • 60 % Aerial • 0 Historic and Cultural features • 17 parks/ landscape features • Predominantly Industrial/ Commercial/ residential • Visual Assessment for Community compatibility = medium/low • Visual Assessment by Rider = medium/ low appeal	Factors: • 65% Aerial or Trench • 25 % At-grade • 4 historic and cultural sensitivity (special features) • 8 parks/ landscape features • Predominantly Industrial with residential • Visual Assessment for Community compatibility = medium/low • Visual Assessment by Rider = medium/ low appeal	Factors: • 60% Aerial or Trench • 30 % At-grade • 3 historic and cultural sensitivity (special features) • 5 parks/ landscape features • Predominantly Industrial/ Commercial • Visual Assessment for community compatibility = medium • Visual Assessment by Rider = low visual appeal
	2	**3**	**3**	**3**	**2**	**2**	**2**
Minimize Impacts on Natural Resources							
Water Resources	19 Crossings (950 linear ft) • This option traverses urban areas and would not adversely impact water resources in these areas. Most of the waters are channelized and lack sensitive habitats. In addition, permanent impairment to beneficial uses is not anticipated.	12 Crossings (600 linear ft) • This option traverses urban areas and would not adversely impact water resources in these areas. Most of the waters are channelized and lack sensitive habitats. In addition, permanent impairment to beneficial uses is not anticipated.	14 crossings (700 linear ft) • This option traverses urban areas and would not adversely impact water resources in these areas. Most of the waters are channelized and lack sensitive habitats. In addition, permanent impairment to beneficial uses is not anticipated.	9 Crossings (450 linear ft) • This option is proposed through the Wittier Narrows Nature Center, impacting water resources within the Nature Center. It would also impact the Santa Ana River through Orange and Riverside Counties. Portions of the river in these areas support natural stream channels and riparian banks.	7 Crossings (350 linear ft) • It would impact the Santa Ana River through Orange and Riverside Counties. Portions of the river in these areas support natural stream channels and riparian banks. It would also impact the North Fork Coyote Creek and Temescal Creek.	5 Crossings (250 linear ft) • This option traverses urban areas and would not adversely impact water resources in these areas. Most of the waters are channelized and lack sensitive habitats. In addition, permanent impairment to beneficial uses is not anticipated.	19 Crossings (950 linear ft) • This option traverses urban areas and would not adversely impact water resources in these areas. Most of the waters are channelized and lack sensitive habitats. In addition, permanent impairment to beneficial uses is not anticipated.
	5	**5**	**4**	**3**	**3**	**5**	**5**

Evaluation Criteria	Los Angeles Union Station to March Air Reserve Base						
	UPRR Colton Line	**UPRR Riverside Line**	**I-10**	**SR-60**	**BNSF Fullerton Line /SR-91**	**UPRR Colton/ San Bernardino**	**UPRR Riverside/ UPRR Colton**
Floodplain Impacts	• LA River • Rio Hondo • San Gabriel River • Santa Ana River	• LA River • Rio Hondo • San Gabriel River • Santa Ana River	• LA River • Rio Hondo • San Gabriel River	• LA River • Whittier Narrows • (Rio Hondo, • San Gabriel River) • Santa Ana River	• LA River • Rio Hondo • San Gabriel River • Santa Ana River	• Santa Ana River	• LA River • Rio Hondo • San Gabriel River • Santa Ana River
	4	**4**	**4**	**3**	**3**	**4**	**4**
Wetlands (sites/area)	• Palustrine Emergent Wetland (PE) at San Gabriel River • PE, Riparian Wetland (RI), at Santa Ana River • Moderate level of constraint (1/0.5 ac)	• PE at San Gabriel River • PE,RI at Santa Ana River • Moderate level of constraint (1/1.7 ac)	• PE San Gabriel River • PE at Walnut Creek • PE, RI at Diamond Bar Creek, 57 & and 60 Interchange • PE at Mulberry Creek • Moderate level of constraint (0/0)	• PE at San Gabriel River • PE, RI at Santa Ana River • RI at Box Springs Road • Vernal Pool (VP) in Western Riverside County (associated with Agricultural lands) • High level of constraint (0/0)	• PE at San Gabriel River (PE) • PE at North Fork Coyote Creek • PE, RI at Santa Ana River (high quality riparian habitat near Prado Basin) • PE, RI at Temescal Creek • High level of constraint (0/0)	• PE, RI at Santa Ana River • Low level of constraint (1/0.5 ac)	• PE at San Gabriel River • PE, RI, at Santa Ana River • Moderate level of constraint (1/0.5 ac)
	4	**4**	**4**	**2**	**2**	**5**	**4**
Threatened & Endangered Species Impacts	• Predominately developed route, low potential for impacts; • Close to burrowing owl habitat (not a listed species) • Constraint Level = Low	• Predominately developed route, low potential for impacts • Constraint Level = Low	• Predominantly developed route, low potential for impacts • Close proximity to California Gnatcatcher habitat • Constraint Level = Low/Moderate	• Close proximity to Broadleaf Riparian and associated special status species • Crossings at San Gabriel River, Santa Ana River, Box Springs Road area with potential T&E riparian and aquatic species • Vernal pool in Western Riverside County associated with Agricultural lands with potential for Riverside and Vernal Pool Fairy Shrimp • Constraint Level = Moderate/High	• Most of route developed • Close proximity to Least Bell's vireo and Stephens' Kangaroo Rat • Crossings at San Gabriel River, North Fork Coyote Creek, and Santa Ana River (high quality riparian habitat near Prado Basin) • PE, RI at Temescal Creek • Constraint Level = Moderate	• Urbanized route, low potential for impacts • Constraint Level = Low	• Predominately developed route, low potential for impacts; • Close to burrowing owl habitat (not a listed species) • Constraint Level = Low
	4	**5**	**4**	**3**	**3**	**5**	**4**

Evaluation Criteria	Los Angeles Union Station to March Air Reserve Base						
	UPRR Colton Line	**UPRR Riverside Line**	**I-10**	**SR-60**	**BNSF Fullerton Line /SR-91**	**UPRR Colton/ San Bernardino**	**UPRR Riverside/ UPRR Colton**
Minimize Impacts on Social and Economic Resources							
Environmental Justice Impacts (Demographics)	• Low-Mod Area: Medium • High Minority: High • Both Low-Mod/ Minority: Medium	• Low-Mod Area: Medium • High Minority: High • Both Low-Mod/Minority: Medium	• Low-Mod Area: Medium • High Minority: High • Both Low-Mod/Minority: Medium	• Low-Mod Area: Low • High Minority: High • Both Low-Mod/Minority: Low	• Low-Mod Area: Medium • High Minority: Medium • Both Low-Mod/Minority: Medium	• Low-Mod Area: Medium • High Minority: High • Both Low-Mod/Minority: Medium	• Low-Mod Area: Medium • High Minority: High • Both Low-Mod/Minority: Medium
	3	**3**	**3**	**4**	**4**	**3**	**3**
Farmland Impacts	None	None	None	None	None	None	None
	5	**5**	**5**	**5**	**5**	**5**	**5**
Minimize Impacts on Cultural Resources							
Cultural Resources Impacts	• Ref# 72000231 Los Angeles Plaza Historic District • Ref# 80000811 Los Angeles Union passenger Terminal • Ref# 78000689 Plaza Substation • Ref# 71000158 San Gabriel Mission • Ref# 86000408 Pomona YMCA Building	• Ref# 72000231 Los Angeles Plaza Historic District • Ref# 80000811 Los Angeles Union passenger Terminal • Ref# 78000689 Plaza Substation • Ref# 82002201 Pomona Fox Theater • Ref# 86001477 Edison Historic District • Ref# 82002227 Old YMCA Building • Ref# 80000833 Riverside-Arlington Heights Fruit Exchange	• Ref# 72000231 Los Angeles Plaza Historic District • Ref# 80000811 Los Angeles Union passenger Terminal • Ref# 78000689 Plaza Substation	• none	• Ref# 72000231 Los Angeles Plaza Historic District • Ref# 80000811 Los Angeles Union passenger Terminal • Ref# 78000689 Plaza Substation • Ref# 78000684 McNally's Windemere Ranch Headquarters Ref# 94000360 Farmers and Merchants Bank of Fullerton • Ref# 83003551 Fullerton Union Pacific Depot	• Ref# 72000231 Los Angeles Plaza Historic District • Ref# 80000811 Los Angeles Union passenger Terminal	• Ref# 72000231 Los Angeles Plaza Historic District • Ref# 80000811 Los Angeles Union passenger Terminal • Ref# 78000689 Plaza Substation • Ref# 71000158 San Gabriel Mission • Ref# 86000408 Pomona YMCA Building
	2	**2**	**4**	**5**	**2**	**2**	**2**

Evaluation Criteria	Los Angeles Union Station to March Air Reserve Base						
	UPRR Colton Line	**UPRR Riverside Line**	**I-10**	**SR-60**	**BNSF Fullerton Line /SR-91**	**UPRR Colton/ San Bernardino**	**UPRR Riverside/ UPRR Colton**
Parks Impacts	• 3 Parks • Lincoln Park, Lincoln Heights • Almansor Park, Alhambra • Highland Park, Riverside	• Amigo Park, Pico Rivera • Rose Hills Memorial Park • Little League Field and Park, Diamond Bar • Martha McLean Anza Narrows Park, Jurupa • Nichols Park, Jurupa	• El Pueblo de Los Angeles State Historic Park , Los Angeles • Ramona Gardens Park, Boyle Heights • Parque Xalapa, West Covina • Frank G. Bonelli Regional Park, San Dimas • Ganesha Park, Pomona • Wilderness Park, Montclair • MacArthur Park, Montclair	• Belvedere Park, East Los Angeles • Bella Vista Park, Monterey Park • Carlton Petersen Park, Diamond Bar • Fairmount Park, Riverside	• Zimmerman Park, Norwalk • Independence Park of Fullerton • Amerige Park, Fullerton • Peralta Canyon Park, Anaheim • Yorba Regional Park, Anaheim • Featherly Regional Park, Yorba Linda • Griffin Park, Corona • A D Shamel Park, Riverside	• Santa Fe Park, Fontana • Nunez Park, San Bernardino	• Lincoln Park, Lincoln Heights • Almansor Park, Alhambra • Highland Park, Riverside
Recreation Areas Impacts	Alhambra Municipal Golf Course	None	None	• Ramon Garcia Recreation Center, Boyle Heights • Whittier Narrows Recreation Area, South El Monte • Diamond Bar Golf Course, Diamond Bar	None	None	Alhambra Municipal Golf Course
Wildlife Refuges Impacts	Box Springs Mountain Reserve, Riverside	Santa Ana River Wildlife Area, Jurupa	None	Quail Run Open Space, Riverside	None	None	Box Springs Mountain Reserve, Riverside
	3	**2**	**2**	**2**	**2**	**4**	**3**

Evaluation Criteria	Los Angeles Union Station to March Air Reserve Base						
	UPRR Colton Line	**UPRR Riverside Line**	**I-10**	**SR-60**	**BNSF Fullerton Line /SR-91**	**UPRR Colton/ San Bernardino**	**UPRR Riverside/ UPRR Colton**
Soils/Slope Constraints	• Soils consist of alluvium and older lake deposits • Slope can be constructed with a 2:1 ratio, in general • Overall, low potential for landslide • Potential for landslides moderate to high where the UP Colton comes in contact with the Puente Hills and San Jose Hills	• Soils consist of younger fan deposits, wind-blown sand, older fan deposits and mostly alluvium, lake, playa and terrace deposits • Slope can be constructed with a 2:1 ratio, in general • Overall, low potential for landslide • Potential for landslides is moderate to high where the UP Riverside comes in contact with the Puente Hills	• Soils consist of non-marine, marine, wind-blown sand, glacial deposits, a very small amount of volcanics and primarily alluvium • Slope can be constructed with a 2:1 ratio, in general • Overall, low potential for landslide • Potential for landslides is moderate to high where the I-10 comes in contact with the San Jose Hills	• Soils consist of Alluvium deposits (mostly non-marine) and rock consists of moderate to well-consolidated sandstone, shale, siltstone, conglomerates and breccia • Slope can be constructed with a 2:1 ratio, in general • Overall, low potential for landslide • Potential for landslides is moderate to high where SR 60 comes in contact with the Puente Hills	• Soils consist of older lake deposits, primarily alluvium and approx. 1 mile of granite at the end of alignment • Slope can be constructed with a 2:1 ratio, in general • Overall, low potential for landslide • Potential for landslides is moderate to high where the 91 freeway meets the Peralta Hills and the Santiago Mountains	• Soils consist primarily of alluvium • Slope can be constructed with a 2:1 ratio, in general • Potential for landslides is low	• Soils consist of alluvium and older lake deposits • Slope can be constructed with a 2:1 ratio, in general • Overall, low potential for landslide • Potential for landslides moderate to high where the UP Colton comes in contact with the Puente Hills and San Jose Hills
	2	**2**	**2**	**2**	**2**	**4**	**2**
Seismic Constraints	• Moderate to high potential for liquefaction • Two major faults cross this segment: • Santa Monica Fault Zone in East LA (Type B, MG MAX = 6.6) • San Jacinto Fault 3 miles east of alignment in southern San Bernardino (Type B, MG MAX = 6.7) • Moderate to high potential for surface rapture at the fault location.	• Moderate to high potential for liquefaction • Several major faults nearby may have impact on this alignment: • Santa Monica Fault Zone (Type B, MG MAX = 6.6) • San Jose Fault (Type B, MG MAX = 6.5) • Chino Fault (Type B, MG MAX = 6.7)	• Moderate to high potential for liquefaction • Two major faults pass through this alignment: • San Jacinto Fault approx. 1 ½ to 2 miles (2.4 to 3.2 km) west of the 15 freeway (Type B, MG MAX = 6.7) • San Jose Fault at the intersection of I-10 and 71 (Type B, MG MAX = 6.5) • Moderate to high potential for surface rapture at the fault location.	• Moderate to high potential for liquefaction • One major fault passes through the alignment at the San Antonio Creek Channel: • Chino Fault (Type B, MG MAX = 6.7) • Moderate to high potential for surface rapture at the fault location • Several other faults nearby may have impact on the alignment.	• Moderate to high potential for liquefaction • Three major faults pass through the alignment: • San Jacinto Fault at the intersection of I-15 freeway and SR-60 in South San Bernardino (Type B, MG MAX = 6.7) • Chino Fault ½ mile/east of intersection 71 and SR-91 (Type B, MG MAX = 6.7).	• Moderate to high potential for liquefaction • One major fault passes through the alignment at intersection of 15 freeway and SR 60: • San Jacinto Fault (Type B, MG MAX =6.7) • Moderate to high potential for surface rapture at the fault location • Several other faults nearby may have impact on the alignment.	• Moderate to high potential for liquefaction • Two major faults cross this segment: • Santa Monica Fault Zone in East LA (Type B, MG MAX = 6.6) • San Jacinto Fault 3 miles east of alignment in southern San Bernardino (Type B, MG MAX = 6.7) • Moderate to high potential for surface rapture at the fault location.

Evaluation Criteria	Los Angeles Union Station to March Air Reserve Base						
	UPRR Colton Line	**UPRR Riverside Line**	**I-10**	**SR-60**	**BNSF Fullerton Line /SR-91**	**UPRR Colton/ San Bernardino**	**UPRR Riverside/ UPRR Colton**
	• Several other faults nearby may have impacts on the alignment. • Detail investigation recommended for the potential impact of the fault on the alignment.	• Detail investigation recommended for the potential impacts of the faults on the alignment.	• Several other faults nearby may have impact on the alignment. • Detail investigation recommended for the potential impact of the fault on the alignment.	• Detail investigation recommended for the potential impact of the fault on the alignment	• Whittier-Elsinore Fault 3 miles west of intersection of 71 and 91 (Type B, MG MAX = 6.8) • Moderate to high potential for surface rapture at the fault location • Several other faults nearby may have impact on the alignment • Detail investigation recommended for the potential impact of the fault on the alignment	• Detail investigation recommended for the potential impact of the fault on the alignment	• Several other faults nearby may have impacts on the alignment • Detail investigation recommended for the potential impact of the fault on the alignment
	2	**2**	**2**	**3**	1	**3**	**2**
Hazardous Materials/Waste Constraints	• 12 hazardous waste generators • 1 hazardous waste transporter • 3 hazardous waste release sites (1 site no further action)	• 5 hazardous waste generators • 5 hazardous waste release sites (1 site no further action; 1 site may be significant (DTSC Code AA+)	• 1 hazardous waste generator • 1 hazardous waste site (no further action)	• 1 hazardous waste generator • 2 hazardous waste release sites (1 site no further action)	• 7 hazardous waste generators • 7 hazardous waste release sites (2 sites no further action)	• 2 hazardous waste generators • 2 hazardous waste transporters • 2 hazardous waste sites	• 12 hazardous waste generators • 1 hazardous waste transporter • 3 hazardous waste release sites (1 site no further action)
	4	**3**	**5**	**4**	**3**	**3**	**4**

1 2 3 4 5
Least Favorable **Most Favorable**

Table 2-H-19 continued
Los Angeles to San Diego via Inland Empire High-Speed Train Alignment Evaluation Matrix
Segment 2 – March ARB to Mira Mesa

Alignment = Alignment Carried Forward **Alignment** = Alignment Eliminated = Primary or Secondary Reason for Elimination

Evaluation Criteria	Segment 2 Alignments—March ARB to Mira Mesa	
	I-215/I-15 Long Tunnel	**I-215/I-15**
Travel Time	20.4 minutes	20.8 minutes
	5	**5**
Length	70.3 miles (113 km)	71.8 miles (115 km)
	5	**4**
Population /Employment Catchment	Not Applicable	Not Applicable
Maximize Connectivity and Accessibility		
Intermodal Connection	The Escondido West station site is accessible by road from I-15 and SR-78 via Mission Road; it also has access to a rail spur south of Mission; the Mira Mesa station has auto access to I-15 via Mira Mesa Blvd. and Scripps Ranch Blvd.	The Escondido East station site is accessible by road from I-15 and SR-78 via Centre City Parkway and Valley Parkway; it also is near a rail spur; the Mira Mesa station has auto access to I-15 via Mira Mesa Blvd. and Scripps Ranch Blvd..
	The Escondido West station site could connect with automobiles and buses, and trains via an adjacent rail spur; however little intermodal connection is considered likely at the present proposed Mira Mesa site.	The Escondido East station site could connect with cars and buses, and trains via a nearby rail spur; it is adjacent to Escondido Transit Center; however little intermodal connection is considered likely at the presently proposed Mira Mesa site.
Minimize Operating and Capital Costs		
Length	70.3 miles (113 km)	71.8 miles (115 km)
	5	**5**
Operational Issues	Flatter grades and fewer curves, average speed 207 mph (333 kph)	Slightly steeper grades and tighter curves, average speed 207 mph (333 kph).
	5	**5**
Construction Issues	Considerable tunnel construction; inaccessible terrain	Fewer tunnels, but more earthwork
	2	**4**

Evaluation Criteria	Segment 2 Alignments—March ARB to Mira Mesa	
	I-215/I-15 Long Tunnel	**I-215/I-15**
Capital Cost		
	2	**4**
Right-of-Way Issues/Cost	New right-of-way required through sensitive environment.	Substantial earthwork may require additional right-of-way or extensive retaining walls
	4	**2**
Maximize Compatibility with Existing and Planned Development		
Land Use Compatibility and Conflicts	Crosses 6.15 miles (9.9 km) of existing residential areas; likely more than 250 individual homes would need to be removed. Crosses 0.4 mile (0.6 km) of San Dieguito River Park (JPA) at Lake Hodges; crosses the main Post Office for the San Diego area for 0.25 mile (0.4 km); perhaps that part of the route could be moved to the east. Would act to divide the community of Carmel Mountain Ranch, and would adversely affect the entry into the community (per City of San Diego Planning Department).	Crosses 2.55 miles (4.1 km) of existing residential areas; likely more than 100 individual homes would have to be removed. Crosses 0.55 mile (0.88 km) of Kit Carson Park in Escondido; 0.5 mile (0.8 km) of San Dieguito River Park; and is adjacent to Rod McLeod Park in Escondido. Would cross North County Fair Shopping Center, passing over or through retail structures if this alignment stays in the same place; perhaps it could be moved to the east, to pass over the parking lot. Crosses the main Post Office for the San Diego area for 0.25 mile (0.4 km); perhaps that part of the route could be moved to the east. Would act to divide the community of Carmel Mountain Ranch, and would adversely affect the entry into the community (per City of San Diego Planning Department)
	3	**2**
Visual Quality Impacts	Factors: • 40% Aerial or tunnel • 40 % At-grade • 10% Aerial • 0 historic and cultural sensitivity • 9 parks/landscape features • Predominantly Open space/agriculture and areas with residential • Visual Assessment for Community compatibility = medium/high • Visual assessment for Rider = low appeal	Factors: • 40% Most tunnel, some aerial • 40 % At-grade • 10% Aerial • 0 historic and cultural sensitivity • 9 parks/landscape features • Predominantly Open space/agriculture and areas with residential • Visual Assessment for Community compatibility = medium/low • Visual assessment for Rider = medium/ high appeal
	3	**3**

Evaluation Criteria	Segment 2 Alignments—March ARB to Mira Mesa	
	I-215/I-15 Long Tunnel	**I-215/I-15**
Minimize Impacts on Natural Resources		
Water Resources	• Perris Valley Storm Drain • Val Verde Tunnel Colorado Aqueduct • San Jacinto River • Menifee Lakes Country Club lakes • Warm Springs Creek • Santa Gertrudis Creek • Murrieta Creek • Santa Margarita River • Rainbow Creek • Second San Diego Aqueduct • San Luis Rey River • Second San Diego Aqueduct • unnamed creek near Pala Mesa Resort • San Luis Rey River • Keys Creek • unnamed creeks at Nelson Road and Old Hwy 395 (Moose Canyon; SDTBG 1068/1069) • unnamed creeks at Old Castle Road (SDTBG 1068/1069) • unnamed creek adjacent to Champagne Blvd (SDTBG 1089) • unnamed creek at S12 interchange (SDTBG 1089) • Siphon Vista Canal/San Marcos • Escondido Creek • Lake Hodges/San Dieguito River • unnamed creek at Rancho Bernardo Golf Course • unnamed creek at Rancho Bernardo Golf Course • Chicarita Creek • Penasquitos Creek • Second San Diego Aqueduct	• Perris Valley Storm Drain • Val Verde Tunnel Colorado Aqueduct • San Jacinto River • Menifee Lakes Country Club lakes • Warm Springs Creek • Santa Gertrudis Creek • Long Canyon • Empire Creek • Temecula Creek • Second San Diego Aqueduct (3 crossings) • unnamed creek at Stewart Crest Road (SDTBG 1028) • unnamed creek at Pala Road (SDTBG 1048) • San Luis Rey River • Keys Creek • unnamed creeks at Nelson Road and Old Hwy 395 (Moose Canyon; SDTBG 1068/1069) • unnamed creeks at Old Castle Road (Reidy Canyon; SDTBG 1068/1069) • unnamed creek adjacent to Champagne Blvd (SDTBG 1089) • unnamed creek at S12 interchange (SDTBG 1089) • Siphon Vista Canal/San Marcos • Reidy Canyon • Escondido Creek • unnamed creek at Via Rancho Pkwy • Lake Hodges/San Dieguito River • unnamed creek at Rancho Bernardo Golf Course • Chicarita Creek • Los Penasquitos Canyon Creek • Second San Diego Aqueduct
Total Crossings/Linear Feet	27/1,350	27/1,350
	5	**3**
Floodplain Impacts	• San Jacinto River • Murrieta Creek • Santa Margarita River • San Luis Rey River • Keys Creek • San Dieguito River • Penasquitos Creek	• San Jacinto River • Murrieta Creek • Santa Margarita River • San Luis Rey River • Keys Creek • San Dieguito River • Penasquitos Creek
	3	**3**

Evaluation Criteria	Segment 2 Alignments—March ARB to Mira Mesa	
	I-215/I-15 Long Tunnel	**I-215/I-15**
Wetlands	• RI, VP at San Jacinto River and I-215 in Perris • RI, VP at Warm Springs Creek • RI, VP at Murrieta Creek • RI at Los Alamos off I - 215 • RI, VP off I-15 at Santa Margarita River (Temecula Canyon Creek) • RI, VP at Rainbow Creek • RI, VP at San Luis Rey River • RI at Gopher Canyon Road • MA, VP at Lake Hodges/San Dieguito River (high quality wetlands) • Moderate to High. Low if wetland impacts can be avoided by siting tunnels away from wetlands.	• RI, VP at San Jacinto River and I-215 in Perris • RI, VP at Warm Springs Creek • RI, VP at Murrieta Creek • RI, VP at Los Alamos off I-215 • RI, VP off I-15 at Santa Margarita River (Temecula Canyon Creek) • RI, VP at Rainbow Creek • RI, VP at San Luis Rey River • RI at Gopher Canyon Road • MA, VP at Lake Hodges/San Dieguito River (high quality wetlands) • Moderate to High. Low if wetland impacts can be avoided by bridges spanning the wetlands
Sites/Area	5/5.7 ac	13/6.9 ac
	4	**2**
Threatened and Endangered Species Impacts	• Agricultural land with possible vernal pools and associated T&E species • Murrieta and San Luis Rey River floodplains with potential sensitive species impacts largely avoided by tunnels. • Potential impacts on wildlife movement, particularly in the Coal Canyon area on the border of Riverside and Orange Counties. Impacts on habitat and movement would be mostly avoided on route with tunneling. • -Potential impacts on Stephen's Kangaroo Rat. • Constraint Level = Low/Moderate	• Agricultural land with possible vernal pools and associated T&E species • Murrieta and San Luis Rey River floodplains with potential sensitive species impacts. • Potential impacts on movement, particularly in the Coal Canyon area on the border of Riverside and Orange Counties. Impacts on habitat and movement could be largely avoided with large underpasses and noise abatement measures. • Potential impacts on Stephen's Kangaroo Rat. • Constraint Level = Moderate
	4	**3**
Minimize Impacts on Social and Economic Resources		
Environmental Justice Impacts (Demographics)	No concentration of minority groups or low-income households was noted along this routing in the initial reconnaissance	It is possible that this routing would affect minority groups or low-income households in Escondido.
	5	**4**
Farmland Impacts	Only 0.3 mile (0.5 km) of agricultural land east of the East Mission Road interchange was noted from the aerial photography utilized for land use interpretation	Only 0.5 mile (0.8 km) of agricultural land east of the East Mission Road interchange was noted from the aerial photography for land use interpretation.
	3	**3**

Evaluation Criteria	Segment 2 Alignments—March ARB to Mira Mesa	
	I-215/I-15 Long Tunnel	**I-215/I-15**
Minimize Impacts on Cultural Resources		
Cultural Resources Impacts	None	None
	5	**5**
Parks and Recreation Areas / Wildlife Refuge Impacts	**Parks**	
	• Copper Creek Park, Perris • Alta Murrieta Sports Park, Murrieta • Felicita County Park, Escondido • Sabre Springs Park, Sabre Springs	• Copper Creek Park, Perris • Rancho Acacias Park, Murrieta • Jesmond Dene Park, Jesmond Dene • Rod McLeod Park, Escondido • Kit Carson Park, Escondido • Sabre Springs Park, Sabre Springs
	Recreation Areas	
	None	None
	Wildlife Refuges	
	None	Santa Margarita Ecological Reserve
	3	1
Maximize Avoidance of Areas with Geologic and Soils Constraints		
Soils/Slope Constraints	• March ARB to just north of Paoma Valley – soils consist primarily of alluvium • March ARB to just north of Paoma Valley – slope ratio of 2:1 can be constructed, in general • March ARB to just north of Paoma Valley – low landslide potential (east of alignment), moderate landslide potential (west of alignment) • Temecula to Mira Mesa – soils and bedrock consist of some deposits of marine sediments and older lake deposits, but primarily metavolcanic and granitic rock • Temecula to Mira Mesa – Slope can be constructed with a 2:1 ratio, in general. Steeper slope may be feasible • Temecula to Mira Mesa – moderate potential for landslides	• March ARB to just north of Paoma Valley – soils consist primarily of alluvium • March ARB to just north of Paoma Valley – slope ratio of 2:1 can be constructed, in general • March ARB to just north of Paoma Valley – low landslide potential (east of alignment), moderate landslide potential (west of alignment) • Temecula to Mira Mesa – soils and bedrock consist of older lake deposits, marine and non-marine deposits, metavolcanic rock (through South Fork Moosa Cyn.), and primarily granitic rock • Temecula to Mira Mesa – Slope can be constructed with a 2:1 ratio, in general. Steeper slope may be feasible • Temecula to Mira Mesa – moderate potential for landslides
	3	**3**

Evaluation Criteria	Segment 2 Alignments—March ARB to Mira Mesa	
	I-215/I-15 Long Tunnel	**I-215/I-15**
Seismic Constraints	• From March ARB to just north of Paoma Valley – moderate potential for liquefaction • Temecula to Mira Mesa – low potential for liquefaction due to granitic bedrock • One major fault crosses this segment between Paoma Valley (to the north) and Temecula (to the south): • Elsinore Fault (Type B, MG MAX = 6.8) • Moderate to high potential for surface rapture at the fault location • Detail investigation recommended for the potential impact of the fault on the alignment * With the exception of the San Luis Rey River and surrounding floodplain, granite in this alignment is potentially suitable for tunneling depending on the physical qualities of the bedrock	• From March ARB to just north of Paoma Valley – moderate potential for liquefaction • Temecula to Mira Mesa – low potential for liquefaction due to granitic bedrock • One major fault crosses this segment between Paoma Valley (to the north) and Temecula (to the south): • Elsinore Fault (Type B, MG MAX =6.8) • Moderate to high potential for surface rapture at the fault location • Detail investigation recommended for the potential impact of the fault on the alignment
	3	**3**
Maximize Avoidance of Areas with Potential Hazardous Materials		
Hazardous Materials/Waste Constraints	1 hazardous waste release site	3 hazardous waste release sites (2 sites no further action)
	5	**5**

1 2 3 4 5
Least Favorable **Most Favorable**

Table 2-H-19 continued
Los Angeles to San Diego via Inland Empire High-Speed Train Alignment Evaluation Matrix
Segment 3 – Mira Mesa to San Diego Qualcomm Stadium

Alignment = Alignment Carried Forward **Alignment** = Alignment Eliminated = Primary or Secondary Reason for Elimination

Evaluation Criteria	Segment 3 Alignments—Mira Mesa to San Diego					
	I-15 to Coast via Carroll Canyon	**I-15 to Coast via Miramar Road**	**I-15 to Coast via SR-52**	**I-15/SR-163 to Santa Fe Station**	**I-15 to Qualcomm Stadium**	**I-15 to SR-163 to I-8 to Coast**
Travel Time	14.1 minutes	13.5 minutes	12.2 minutes	7.1 minutes	4.2 minutes	9.5 minutes
	1	**2**	**3**	**5**	**5**	**4**
Length	20.1 miles (32.3 km)	19.8 miles (31.8 km)	20.8 miles (33.5 km)	15.7 miles (25.3 km)	10.1 miles (16.3 km)	17.5 miles (28.2 km)
	2	**3**	**2**	**5**	**5**	**4**
Population/ Employment Catchment	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Maximize Connectivity and Accessibility						
Intermodal Connection	This alignment would connect to the University City station and via the LOSSAN corridor to downtown San Diego and Lindberg Field.	This alignment would connect to the University City station and via the LOSSAN corridor to downtown San Diego and Lindberg Field.	This alignment would connect to the University City station and via the LOSSAN corridor to downtown San Diego and Lindberg Field.	Kearny Mesa station has access to SR-163 and SR-274 via Convoy St. and Mesa College Drive. It could be served by buses, and is less than 1 mile (1.6 km) from Montgomery Field, a business airport. Santa Fe Station can be accessed by car, is served by buses, and is adjacent to a major Trolley station	Qualcomm Station has access to I-15 via Friars Road, and the site is served by buses and an existing Trolley station. Montgomery Field, a business airport, is less than 3 miles away	Kearny Mesa station has access to SR-163 and SR-274 via Convoy St. and Mesa College Drive. It could be served by buses, and is less than 1 mile (1.6 km) from Montgomery Field, a business airport. Information about other stations to which route 3.f might connect is being compiled by another firm.
	3	**3**	**3**	**4**	**4**	**3**

Evaluation Criteria	Segment 3 Alignments—Mira Mesa to San Diego					
	I-15 to Coast via Carroll Canyon	**I-15 to Coast via Miramar Road**	**I-15 to Coast via SR-52**	**I-15/SR-163 to Santa Fe Station**	**I-15 to Qualcomm Stadium**	**I-15 to SR-163 to I-8 to Coast**
Minimize Operating and Capital Costs						
Length	20.1 miles (32.3 km)	19.8 miles (31.8 km)	20.8 miles (33.5 km)	15.7 miles (25.3 km)	10.1 miles (16.3 km)	17.5 miles (28.2 km)
	2	**3**	**2**	**5**	**5**	**4**
Operational Issues	Significant curves that reduce speeds, average speed 91 mph (146 kph).	Significant curves that reduce speeds, average speed 93 mph (150 kph).	Significant curves that reduce speeds, average speed 106 mph (171 kph).	Fewer curves better speeds, average speed 141 mph (227 kph).	Fewer curves better speeds, average speed 153 mph (246 kph).	Significant curves that reduce speeds, average speed 117 mph (188 kph).
	1	1	**2**	**4**	**4**	**2**
Construction Issues	Sensitive environment, difficult terrain	Urban environment	Urban Environment	Urban Environment, Balboa Park	Shortest length stopping short of areas of major development	Urban Environment, densely developed
	4	4	3	1	4	2
Capital Cost						
	2	**2**	**2**	**4**	**5**	**3**
Right-of-Way Issues/Cost	Needs new ROW through sensitive environment.	Constrained ROW densely developed area.	Constrained ROW densely developed area.	Constrained ROW densely developed area.	Constrained ROW densely developed area.	Constrained ROW densely developed area.
	3	**3**	**2**	**4**	**5**	**4**

Evaluation Criteria	Segment 3 Alignments—Mira Mesa to San Diego					
	I-15 to Coast via Carroll Canyon	**I-15 to Coast via Miramar Road**	**I-15 to Coast via SR-52**	**I-15/SR-163 to Santa Fe Station**	**I-15 to Qualcomm Stadium**	**I-15 to SR-163 to I-8 to Coast**
Maximize Compatibility with Existing and Planned Development						
Land Use Compatibility and Conflicts	Crosses 0.45 mile (0.72 km) of existing residential area, perhaps 20 residences or so; crosses 0.25 miles (0.4 km) of areas graded in the 1999 aerial photo, now likely developed residential uses; crosses Miramar CC (0.2 mi. [0.3 km]); crosses Hour-glass Field Park (0.25 mile [0.4 km]); crosses 0.85 mile (1.4 km) of industrial uses.	Crosses 0.55 mile (0.8 km) of existing residential area, perhaps 22 dwellings or so; crosses 0.25 mile (0.4 km) of areas graded in the 1999 aerial photo, now likely developed residential uses; crosses 2.6 miles (4.2 km) of commercial and industrial land uses	Crosses 4.95 miles (8.0 km) of MCAS Miramar; specific potential conflicts there were compiled by another firm in the HNTB team. Crosses Scripps Ranch HS for 0.15 miles. Crosses 1.2 miles (1.9 km) of industrial uses. Crosses 2.45 miles (3.9 km) of Marion Bear Park south of SR-52. Non-park uses of parks established by ordinance require a 2/3 vote of the people. Crosses 1.08 miles (1.7 km) of existing residential use-loss of affordable housing issue	Crosses 2.55 miles (4.0 km) of MCAS Miramar; specific potential conflicts there were compiled by another firm in the HNTB team. Crosses Scripps Ranch HS for 0.15 mile (0.2 km). Crosses 4.4 miles (7.1 km) of commercial or industrial uses, including more than a mile of high-rise development in downtown San Diego. Crosses 1.2 miles (1.9 km) of existing residential use-loss of affordable housing issue. Crosses Balboa Park for 0.55 mile (0.8 km). Non-park uses there require a 2/3 vote of the people	Crosses 3.7 miles (6.0 km) of MCAS Miramar; specific potential conflicts there were compiled by another firm in the HNTB team. Crosses 0.6 miles (1.0 km) of residential uses, in Scripps Ranch and in Tierrasanta Murphy Canyon. The Murphy Canyon residential area is military housing. It could be avoided by moving the route slightly to the west. Crosses 0.15 mile (0.2 km) of Scripps Ranch HS. Crosses 1.4 miles (2.3 km) of industrial	Crosses 2.55 miles (4.1 km) of MCAS Miramar; specific potential conflicts there were compiled by another firm in the HNTB team. Crosses 1.2 miles (1.9 km) of residential uses, in Scripps Ranch and Linda Vista –loss of affordable housing issue. Crosses 0.15 mile (0.2 km) of Scripps Ranch HS. Crosses 4.07 miles (6.5 km) of commercial or industrial uses. Crosses golf course in Mission Valley for 0.9 mile (1.5 km). Possible conflict with new planned Caltrans HQ north of Old Town
	3	**3**	1	1	**2**	**2**

Evaluation Criteria	Segment 3 Alignments—Mira Mesa to San Diego					
	I-15 to Coast via Carroll Canyon	**I-15 to Coast via Miramar Road**	**I-15 to Coast via SR-52**	**I-15/SR-163 to Santa Fe Station**	**I-15 to Qualcomm Stadium**	**I-15 to SR-163 to I-8 to Coast**
Visual Quality Impacts	Factors: • 100% Aerial or Depressed • 0 historic and cultural sensitivity • 1 parks/ landscape feature • Predominantly open space and commercial • Visual Assessment for Community compatibility = low /medium • Visual assessment for Rider = low/medium appeal	Factors: • 100% Aerial • 0 historic and cultural sensitivity • 2 parks & landscape features • Predominantly residential and open space with areas of commercial • Visual Assessment for Community compatibility = low • Visual assessment for Rider = medium/low appeal	Factors: • 100% Aerial • 0 historic and cultural sensitivity • 3 parks/ landscape feature • Predominantly open space and commercial • Visual Assessment for Community compatibility = low/ medium • Visual assessment for Rider = low appeal	Factors: • 30% Aerial or Depressed • 80 % Tunnel • 1 historic and cultural sensitivity • 2 parks/ landscape feature • Predominantly open space and commercial • Visual Assessment for Community compatibility = medium • Visual assessment for Rider = medium /low appeal	Factors: • 50% Aerial or Depressed • 50 % Tunnel • 0 historic and cultural sensitivity • 2 parks/ landscape feature • Predominantly open space and commercial • Visual Assessment for Community compatibility = high • Visual assessment for Rider =low appeal	Factors: • 80% Aerial or Depressed • 20% tunnel • 0 historic and cultural sensitivity • 2 parks/ landscape feature • Predominantly open space and commercial • Visual Assessment for Community compatibility = high • Visual assessment for Rider = medium appeal
	3	**2**	**2**	**3**	**3**	**4**
Minimize Impacts on Natural Resources						
Water Resources	• Carol Canyon Creek	• Carol Canyon Creek • Rose Canyon Creek	• Carol Canyon Creek • Rose Canyon • San Clemente Canyon • unnamed creek near Convoy Street • unnamed creek near Regents Road • Rose Canyon Creek	• Carol Canyon Creek • Rose Canyon • San Clemente Canyon • San Diego River	• Carol Canyon Creek • Rose Canyon • San Clemente Canyon • Murphy Canyon • Elenue Canyon • Shepherd Canyon • Murphy Canyon • San Diego River	• Carol Canyon Creek • Rose Canyon • San Clemente Canyon • San Diego River
Total Crossings/Linear Feet	1/50	2/100	6/300	4/200	8/400	4/200
	3	**2**	**2**	**2**	**2**	**2**
Floodplain Impacts	• Carol Canyon Creek	• Carol Canyon Creek • Rose Canyon Creek	• Carol Canyon Creek • San Clemente Canyon • Rose Canyon	• Carol Canyon Creek • Rose Canyon • San Clemente Canyon • San Diego River	• Carol Canyon Creek • Murphy Canyon ? • San Diego River	• Carol Canyon Creek • Rose Canyon • San Clemente Canyon • San Diego River
	3	**3**	**3**	**3**	**3**	**3**

Evaluation Criteria	Segment 3 Alignments—Mira Mesa to San Diego					
	I-15 to Coast via Carroll Canyon	**I-15 to Coast via Miramar Road**	**I-15 to Coast via SR-52**	**I-15/SR-163 to Santa Fe Station**	**I-15 to Qualcomm Stadium**	**I-15 to SR-163 to I-8 to Coast**
Wetlands	• RI, potential VP habitat at Carol Canyon Creek	• RI, VP at Carol Canyon Creek • Potential high quality VP habitat through MCAS Miramar	• RI, VP at San Clemente Canyon • Potential high quality VP habitat through MCAS Miramar	• RI, VP at San Clemente Canyon • Potential high quality VP habitat through MCAS Miramar	• RI, VP at San Clemente Canyon • Potential high quality VP habitat through MCAS Miramar	• RI, VP at San Clemente Canyon • Potential high quality VP habitat through MCAS Miramar
	Moderate to High	High	High	High	High	High
Sites/Area	5/1.3 ac	5/1.3 ac	6/1.9 ac	3/0.8 ac	3/0.45 ac	12/6 ac
	2	1	1	1	1	1
Threatened & Endangered Species Impacts	• Sensitive forest lands in Carroll Canyon. • High potential for special status species and impacts. • Potential impacts on wildlife movement • Constraint Level = Moderate/High	• NW MCAS Miramar supports vernal pools and occupied California gnatcatcher habitat adjacent to Miramar Road. • Alignment cross habitat/pools. – • Impacts on T&E species may be high and unavoidable. • Constraint Level = High	• Venal pools and associated T&E species. • California gnatcatcher habitat • Close proximity to San Clemente Canyon Broadleaf Riparian Habitat. • High potential for impacts on an important regional wildlife movement corridor. • Constraint Level = High	• See below	• See below	• The vernal pools at MCAS Miramar and associated T&E species: San Diego button-celery, California Orcutt grass, San Diego mesa mint, Riverside fairy shrimp, and San Diego fairy shrimp. • Occupied California gnatcatcher habitat. • Impact are potentially very high, difficult to minimize through either avoidance or mitigation • Alignment is not close to San Diego River, thereby avoiding potential impacts.. • Constraint Level = High
	2	1	1	1	1	1
Minimize Impacts on Social and Economic Resources						
Environmental Justice Impacts (Demographics)	None anticipated	None anticipated.	None anticipated.	Possible issue in Linda Vista, adjacent to SR-163, home of several ethnic minorities.	None anticipated	None anticipated.
	5	**5**	**5**	**3**	**5**	**5**

Evaluation Criteria	Segment 3 Alignments—Mira Mesa to San Diego					
	I-15 to Coast via Carroll Canyon	**I-15 to Coast via Miramar Road**	**I-15 to Coast via SR-52**	**I-15/SR-163 to Santa Fe Station**	**I-15 to Qualcomm Stadium**	**I-15 to SR-163 to I-8 to Coast**
Farmland Impacts	None	None	None	None	None	None
	5	**5**	**5**	**5**	**5**	**5**
Minimize Impacts on Cultural Resources						
Cultural Resources Impacts	None	None	None	Ref# 77000331 Balboa Park Ref# 74000552 George W. Marston House Ref# 76000515 El Prado Complex Ref# 79000524 Medico-Dental Building	None	None
	5	**5**	**5**	**2**	**5**	**5**
Parks and Recreation/Wildlife Refuge Impacts	**Parks**					
	Hourglass Field Community Park, Mira Mesa	None	None	Mission Heights Park Balboa Park City Park, Centre City	None	Mission Heights Park Presidio Community Park
	Recreation Areas					
	None	Miramar Memorial Golf Course	None	None	None	Riverwalk Golf Course
	Wildlife Refuges					
	None	Marian Bear Memorial Natural Park, Clairemont Rose Canyon Open Space	Marian Bear Memorial Natural Park, Clairemont	None	None	None
	4	**4**	**4**	**2**	**5**	**4**

Evaluation Criteria	Segment 3 Alignments—Mira Mesa to San Diego					
	I-15 to Coast via Carroll Canyon	**I-15 to Coast via Miramar Road**	**I-15 to Coast via SR-52**	**I-15/SR-163 to Santa Fe Station**	**I-15 to Qualcomm Stadium**	**I-15 to SR-163 to I-8 to Coast**
Maximize Avoidance of Areas with Geologic and Soils Constraints						
Soils/Slope Constraints	• Soils consist primarily of non-marine, marine, and terrace deposits • Slope can be constructed with a 2:1 ratio, in general • Low potential for landslide	• Soils consist primarily of non-marine, marine, and terrace deposits • Slope can be constructed with a 2:1 ratio, in general • Low potential for landslide	• Soils consist primarily of non-marine, marine, and terrace deposits • Slope can be constructed with a 2:1 ratio, in general • Low potential for landslide	• Soils consist primarily of non-marine, marine, and terrace deposits • Slope can be constructed with a 2:1 ratio, in general • Low potential for landslide	• Soils consist primarily of non-marine, marine, and terrace deposits • Slope can be constructed with a 2:1 ratio, in general • Low potential for landslides	• Soils consist primarily of non-marine, marine, and terrace deposits • Slope can be constructed with a 2:1 ratio, in general • Low potential for landslide
	4	**4**	**4**	**4**	**4**	**4**
Seismic Constraints	• Low to moderate potential for liquefaction • Rose Canyon Fault (Type B, MG MAX = 6.9) starts 3 miles (4.8 km) offshore west of Encinitas, follows San Diego Fwy for 12 miles (19.3 km) and ends in the San Diego Bay approx. 1 mile (1.6 km) from shore • Moderate to high potential for surface rapture at the fault location • Detail investigation recommended for the potential impact of the fault on the alignment	• Low to moderate potential for liquefaction • The Rose Canyon Fault (Type B, MG MAX = 6.9) starts offshore 3 miles (4.8 km) west of Encinitas, follows the San Diego Freeway for 12 miles (19.3 km) and ends in the San Diego Bay approx. 1 mile (1.6 km) from shore • Moderate to high potential for surface rapture at the fault location • Detail investigation recommended for the potential impact of the fault on the alignment	• Low to moderate potential for liquefaction • The Rose Canyon Fault (Type B, MG MAX = B) starts offshore 3 miles (4.8 km) west of Encinitas, follows the San Diego Freeway for 12 miles (19.3 km) and ends in the San Diego Bay approx. 1 mile (1.6 km) from shore • Moderate to high potential for surface rapture at the fault location • Detail investigation recommended for the potential impact of the fault on the alignment	• Low to moderate potential for liquefaction	• Low to moderate potential for liquefaction	• Low to moderate potential for liquefaction • The Rose Canyon Fault (Type B, MG MAX = 6.9) starts offshore 3 miles (4.8 km) west of Encinitas, follows the San Diego Freeway for 12 miles (19.8 km) and ends in the San Diego Bay approx. 1 mile (1.6 km) from shore • Moderate to high potential for surface rupture at the fault location • Detail investigation recommended for the potential impact of the fault on the alignment
	3	**3**	**3**	**4**	**4**	**3**

Evaluation Criteria	Segment 3 Alignments—Mira Mesa to San Diego					
	I-15 to Coast via Carroll Canyon	**I-15 to Coast via Miramar Road**	**I-15 to Coast via SR-52**	**I-15/SR-163 to Santa Fe Station**	**I-15 to Qualcomm Stadium**	**I-15 to SR-163 to I-8 to Coast**
Maximize Avoidance of Areas with Potential Hazardous Materials						
Hazardous Materials/Waste Constraints	No sites	No sites	No sites	1 hazardous waste generator 1 hazardous waste release site	1 hazardous waste generator	1 hazardous waste generator 1 hazardous waste release site
	5	**5**	**5**	**5**	**5**	**5**

1 2 3 4 5
Least Favorable **Most Favorable**

Table 2-H-19 continued
Los Angeles to San Diego via Inland Empire High-Speed Train Station Evaluation Matrix
Los Angeles Union Station to Fullerton Transportation Center

Station Name = Station Carried Forward **Station Name** = Station Eliminated = Primary or Secondary Reason for Elimination

Evaluation Criteria	Station Options				
	El Monte (West of I-605) UPRR Colton	**El Monte (West of I-605) I-10**	**South El Monte (West of I-605)**	**Norwalk, Metrolink Station**	**Fullerton Transportation Center**
Travel Time	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Length	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Population /Employment Catchment (10-mile radius)	1,838,409	1,841,478	2,141,740	2,331,416	1,960,424
	4	**4**	**5**	**5**	**5**
Maximize Connectivity and Accessibility.					
Intermodal Connection	Bus: Yes Metrolink: No Airport: No	Bus: Yes Metrolink: No Airport: No	Bus: Yes Metrolink: No Airport: No	Bus: Yes Metrolink: Yes Airport: No	Bus: Yes Metrolink: Yes Airport: No
	3	**3**	**3**	**5**	**5**
Minimize Operating and Capital Costs.					
Length	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Operational Issues	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Construction Issues	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Capital Cost	Urban Station	Urban Station	Urban Station	Urban Station	Urban Station

Evaluation Criteria	Station Options				
	El Monte (West of I-605) UPRR Colton	**El Monte (West of I-605) I-10**	**South El Monte (West of I-605)**	**Norwalk, Metrolink Station**	**Fullerton Transportation Center**
Right-of-Way Issues/Cost	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Maximize Compatibility with Existing and Planned Development.					
Land Use Compatibility and Conflicts	Sensitive Uses: Schools	Sensitive Uses: Schools	None	None	Sensitive Uses: Police Station
	4	**5**	**5**	**5**	**5**
Visual Quality Impacts	Large scale environment No historical significance High compatibility	Small scale environment No historical significance Medium compatibility	Small scale environment No historical significance Medium compatibility	Small scale environment No historical significance Medium compatibility	Small scale environment Historical significance Low/Medium compatibility
	5	**3**	**3**	**3**	**2**
Minimize Impacts on Natural Resources.					
Water Resources	See discussion in alignment tables (LA Union Station to March AFB)				
	5	**4**	**3**	**4**	**4**
Floodplain Impacts	see discussion in alignment tables (LA Union Station to March AFB)				
	5	**5**	**5**	**5**	**5**
Wetlands	- PE at San Gabriel River and Walnut Creek	- PE at San Gabriel River and Walnut Creek	- PE at San Gabriel River and Walnut Creek	None	None
	Moderate	Moderate	Moderate	Low	Low
	4	**4**	**4**	**5**	**5**
Threatened and Endangered Species Impacts	No potential impacts Constraint Level = Low	No potential impacts Constraint Level = Low	No potential impacts Constraint Level = Low	No potential impacts Constraint Level = Low	No potential impacts Constraint Level = Low
	5	**5**	**5**	**5**	**5**

Evaluation Criteria	Station Options				
	El Monte (West of I-605) UPRR Colton	**El Monte (West of I-605) I-10**	**South El Monte (West of I-605)**	**Norwalk, Metrolink Station**	**Fullerton Transportation Center**
Minimize Impacts on Social and Economic Resources.					
Environmental Justice Impacts (Demographics)	Low-Mod Area: N High Minority: Y Both LM/Minority: N	Low-Mod Area: Y High Minority: Y Both LM/Minority: Y	Low-Mod Area: Y High Minority: Y Both LM/Minority: Y	Low-Mod Area: N High Minority: Y Both LM/Minority: N	Low-Mod Area: N High Minority: N Both LM/Minority: N
	3	1	1	**4**	**5**
Farmland Impacts	None	None	None	None	None
	5	**5**	**5**	**5**	**5**
Minimize Impacts on Cultural Resources.					
Cultural Resources Impacts	None	None	None	None	None
	5	**5**	**5**	**5**	**4**
Parks and Recreation/Wildlife Refuge Impacts	No impacts	No impacts	No impacts	No impacts	No impacts
	5	**5**	**5**	**5**	**5**
Maximize Avoidance of Areas with Geologic and Soils Constraints.					
Soils/Slope Constraints	Soils consist of alluvium Slope with a ratio of 2:1 can be constructed, in general Low potential for landslide	Soils consist of alluvium Slope with a ratio of 2:1 can be constructed, in general Low potential for landslide	Soils consist of alluvium Slope with a ratio of 2:1 can be constructed, in general Low potential for landslide	Soils consist of alluvium and older lake deposits Slope with a ratio of 2:1 can be constructed, in general Low potential for landslide	Soils consist of alluvium and older lake deposits Slope with a ratio of 2:1 can be constructed, in general Low to moderate potential for landslide
	4	**4**	**4**	**4**	**4**

Evaluation Criteria	Station Options				
	El Monte (West of I-605) UPRR Colton	**El Monte (West of I-605) I-10**	**South El Monte (West of I-605)**	**Norwalk, Metrolink Station**	**Fullerton Transportation Center**
Seismic Constraints	Moderate to high potential for liquefaction	Moderate to high potential for liquefaction	Moderate to high potential for liquefaction Workman Hill Fault, an extension of Santa Monica Fault Zone (Type B, MG MAX = 6.6) runs through this station Moderate to high potential for surface rapture at the fault location Detail investigation recommended for the potential impact of the fault on the station	Moderate to high potential for liquefaction	Moderate to high potential for liquefaction
	4	**4**	**4**	**4**	**4**
Maximize Avoidance of Areas with Potential Hazardous Materials.					
Hazardous Materials/Waste Constraints	No sites	No sites	No sites	No sites	No sites

1 2 3 4 5
Least Favorable **Most Favorable**

Table 2-H-19 continued
Los Angeles to San Diego via Inland Empire High-Speed Train Station Evaluation Matrix
City of Industry to Ontario, Southside Metrolink Station

Station = Station Carried Forward **Station** = Station Eliminated = Primary or Secondary Reason for Elimination

Evaluation Criteria	Station Options				
	City of Industry, Metrolink Station	**Cal Poly Pomona**	**Pomona, Metrolink Station**	**Ontario Airport, Northside**	**Ontario Airport, Southside Metrolink Station**
Travel Time	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Length	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Population /Employment Catchment (10-mile radius)	1,324,214	1,161,729	1,040,213	861,152	887,080
	5	**4**	**4**	**3**	**3**
Maximize Connectivity and Accessibility.					
Intermodal Connection	Bus: Yes Metrolink: Yes Airport: No	Bus: Yes Metrolink: No Airport: No	Bus: Yes Metrolink: No Airport: No	Bus: Yes Metrolink: No Airport: Yes	Bus: Yes Metrolink: Yes Airport: No
	4	**2**	**5**	**4**	**3**
Minimize Operating and Capital Costs.					
Length	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Operational Issues	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Construction Issues	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Evaluation Criteria	Station Options				
	City of Industry, Metrolink Station	**Cal Poly Pomona**	**Pomona, Metrolink Station**	**Ontario Airport, Northside**	**Ontario Airport, Southside Metrolink Station**
Capital Cost	Suburban Station	Suburban Station	Urban Station	Suburban Station	Suburban Station
Right-of-Way Issues/Cost	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Maximize Compatibility with Existing and Planned Development					
Land Use Compatibility and Conflicts	Sensitive Uses: None	Sensitive Uses: University	Sensitive Uses: Park/Office	Sensitive Uses: None	Sensitive Uses: None
	5	**3**	**4**	**5**	**5**
Visual Quality Impacts	Small scale environment No historical significance Medium compatibility	Medium scale environment No historical significance Medium/high compatibility	Small scale environment Historical significance Low compatibility	Large scale environment No historical significance High compatibility	Large scale environment No historical significance High compatibility
	3	**4**	1	**5**	**5**
Minimize Impacts on Natural Resources					
Water Resources	See discussion in alignment tables (LA Union Station to March AFB)				
	4	**4**	**5**	**4**	**5**
Floodplain Impacts	See discussion in alignment tables (LA Union Station to March AFB)				
	5	**5**	**5**	**5**	**5**
Wetlands	- RI at Diamond Bar Creek	None	None	None	None
	Moderate	Low	Low	Low	Low
	4	**5**	**5**	**5**	**5**

Evaluation Criteria	Station Options				
	City of Industry, Metrolink Station	**Cal Poly Pomona**	**Pomona, Metrolink Station**	**Ontario Airport, Northside**	**Ontario Airport, Southside Metrolink Station**
Threatened and Endangered Species Impacts	No potential impacts Constraint Level = Low	No potential impacts Constraint Level = Low	No potential impacts Constraint Level = Low	No potential impacts Constraint Level = Low	No potential impacts Constraint Level = Low
	5	**5**	**5**	**5**	**5**
Minimize Impacts on Social and Economic Resources					
Environmental Justice Impacts (Demographics)	Low-Mod Area: N High Minority: Y LM/Minority: N	Low-Mod Area: N High Minority: N LM/Minority: N	Low-Mod Area: Y High Minority: Y LM/Minority: Y	Low-Mod Area: Y High Minority: Y LM/Minority: Y	Low-Mod Area: N High Minority: Y Airport: N
	3	**5**	**2**	**3**	**4**
Farmland Impacts	None	University Agricultural Land	None	None	None
	5	**3**	**5**	**5**	**5**
Minimize Impacts on Cultural Resources					
Cultural Resources Impacts	None	None	Ref# 86000408 Pomona YMCA Building	None	None
	5	**5**	**2**	**5**	**5**
Parks and Recreation/Wildlife Refuge Impacts	No impacts	No impacts	No impacts	No impacts	No impacts
	5	**5**	**5**	**5**	**5**

Evaluation Criteria	Station Options				
	City of Industry, Metrolink Station	**Cal Poly Pomona**	**Pomona, Metrolink Station**	**Ontario Airport, Northside**	**Ontario Airport, Southside Metrolink Station**
Maximize Avoidance of Areas with Geologic and Soils Constraints					
Soils/Slope Constraints	• Bedrock consists of sandstone • Slope with a 2:1 ratio can be constructed, in general. Steeper slope may be feasible • Low potential for landslide	• Bedrock consists of andesitic volcanics • Slope with a 2:1 ratio can be constructed, in general. Steeper slope may be feasible • Low potential for landslide	• Soils consist of younger fan deposits • Slope with a 2:1 ratio can be constructed, in general • Low potential for landslide	• Soils consist of younger fan deposits • Slope with a 2:1 ratio can be constructed, in general • Low potential for landslide	• Soils consist of wind-blown sands and alluvial deposits of modern washes • Slope with a 2:1 ratio can be constructed, in general • Low potential for landslide
	4	**4**	**4**	**4**	**4**
Seismic Constraints	• Low to moderate potential for liquefaction	• Low to moderate potential for liquefaction • The San Jose Fault runs through this station (Type B, MG MAX = 6.5) • Moderate to high potential for surface rapture at the fault location • Detail investigation recommended for the potential impact of the fault on the station	• Moderate to high potential for liquefaction	• Moderate to high potential for liquefaction	• Moderate to high potential for liquefaction
	4	**3**	**4**	**4**	**4**
Maximize Avoidance of Areas with Potential Hazardous Materials					
Hazardous Materials/Waste Constraints	No sites	No sites	No sites	No sites	No sites
	5	**5**	**5**	**5**	**5**

1 2 3 4 5
Least Favorable **Most Favorable**

Table 2-H-19 continued
Los Angeles to San Diego via Inland Empire High-Speed Train Station Evaluation Matrix
San Bernardino to March ARB

Station = Station Carried Forward **Station** = Station Eliminated = Primary or Secondary Reason for Elimination

Evaluation Criteria	Station Options				
	UPRR Colton Line / San Bernardino	**San Bernardino Santa Fe Depot**	**Downtown Riverside, Metrolink Station**	**UC Riverside Campus**	**March ARB**
Travel Time	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Length	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Population /Employment Catchment (10-mile radius)	1,324,442	1,324,214	787,174	724,813	426,642
	4	**5**	**3**	**3**	**3**
Maximize Connectivity and Accessibility.					
Intermodal Connection	Bus: No Metrolink: No Airport: No	Bus: Yes Metrolink: Yes Airport: No	Bus: Yes Metrolink: No Airport: No	Bus: Yes Metrolink: No Airport: No	Bus: Yes Metrolink: No Airport: Yes
	1	**4**	**5**	**3**	**2**
Minimize Operating and Capital Costs.					
Length	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Operational Issues	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Construction Issues	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Capital Cost	Urban Station	Urban Station	Urban Station	Urban Station	Suburban Station

Evaluation Criteria	Station Options				
	UPRR Colton Line/ San Bernardino	**San Bernardino Santa Fe Depot**	**Downtown Riverside, Metrolink Station**	**UC Riverside Campus**	**March ARB**
Right-of-Way Issues/Cost	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Maximize Compatibility with Existing and Planned Development.					
Land Use Compatibility and Conflicts	Sensitive Uses: None	Sensitive Uses: None Historic Santa Fe Depot, Urban Redevelopment Plan.	Sensitive Uses: Public Administration Building and Local Park	Sensitive Uses: University	Sensitive Uses: Military
	5	**3**	**4**	**2**	**3**
Visual Quality Impacts	Medium scale environment No historical significance Medium/high compatibility	Medium scale environment Historical Depot High compatibility	Small scale environment Historical significance Medium compatibility	Medium Scale Environment No Historical Significance Medium/high compatibility	Large scale environment No Historical significance High compatibility
	4	**3**	**3**	**4**	**5**
Minimize Impacts on Natural Resources.					
Water Resources	See discussion in alignment tables (LA Union Station to March AFB)				
	4	**5**	**5**	**5**	**4**
Floodplain Impacts	See discussion in alignment tables (LA Union Station to March AFB)				
	5	- RI at Diamond Bar Creek	**5**	**5**	**5**
Wetlands	None	None	None	None	None
	4	**5**	**5**	**5**	**4**
Threatened and Endangered Species Impacts	No Potential impacts Constraint Level = Low	No potential impacts Constraint Level = Low	No potential impacts Constraint Level = Low	No potential impacts Constraint Level = Low	No likely impacts. Stephen's Kangaroo Rat habitat in the vicinity Constraint Level = Low/
	4	**5**	**5**	**5**	**4**

Evaluation Criteria	Station Options				
	UPRR Colton Line / San Bernardino	**San Bernardino Santa Fe Depot**	**Downtown Riverside, Metrolink Station**	**UC Riverside Campus**	**March ARB**
Minimize Impacts on Social and Economic Resources.					
Environmental Justice Impacts (Demographics)	Low-Mod Area: Y High Minority: Y Both LM/Minority: Y	Low-Mod Area: Y High Minority: Y LM/Minority: Y	Low-Mod Area: Y High Minority: Y Both LM/Minority: Y	Low-Mod Area: Y High Minority: Y Both LM/Minority: Y	Low-Mod Area: Y High Minority: N Both LM/Minority: N
	2	1	1	**2**	**3**
Farmland Impacts	None	None	None	None	None
	5	**5**	**5**	**5**	**5**
Minimize Impacts on Cultural Resources.					
Cultural Resources Impacts	None	None	Ref# 80000833 Riverside-Arlington Heights Fruit Exchange	None	None
	5	**5**	**2**	**5**	**5**
Parks and Recreation/Wildlife Refuge Impacts	No impacts	No impacts	No impacts	No impacts	No impacts
	5	**5**	**5**	**5**	**5**
Maximize Avoidance of Areas with Geologic and Soils Constraints.					
Soils/Slope Constraints	Soils consist of alluvium and older lake deposits Slope with a 2:1 ratio can be constructed Low potential for landslide	Bedrock consists of sandstone Slope with a 2:1 ratio can be constructed, in general. Steeper slope may be feasible Low potential for landslide	Soils consist of older lake deposits Slope with a 2:1 ratio can be constructed Low potential for landslide	Soils and rock consist of alluvium and granitic rock Slope with a 2:1 ratio can be constructed Low to moderate potential for landslide	Soils consist of alluvium Slope with a 2:1 ratio can be constructed Low to moderate potential for landslide
	4	**4**	**4**	**4**	**4**
Seismic Constraints	Low to Moderate potential for liquefaction	Low to moderate potential for liquefaction	Moderate potential for liquefaction	Low to moderate potential for liquefaction	Moderate potential for liquefaction
	4	**4**	**4**	**4**	**4**

Evaluation Criteria	Station Options				
	UPRR Colton Line / San Bernardino	**San Bernardino Santa Fe Depot**	**Downtown Riverside, Metrolink Station**	**UC Riverside Campus**	**March ARB**
Maximize Avoidance of Areas with Potential Hazardous Materials.					
Hazardous Materials / Waste Constraints	No sites	No sites	No sites	No sites	No sites
	5	**5**	**5**	**5**	**5**

1 2 3 4 5
Least Favorable **Most Favorable**

Table 2-H-19 continued
Los Angeles to San Diego via Inland Empire High-Speed Train Station Evaluation Matrix
Murrieta to Mira Mesa

Station = Station Carried Forward **Station** = Station Eliminated = Primary or Secondary Reason for Elimination

Evaluation Criteria	Station Options				
	Murrieta, I-15/I-215 Interchange	**Temecula/Murrieta Border**	**Escondido SR-78/ I-15 Interchange**	**Escondido Transit Center**	**Mira Mesa**
Travel Time	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Length	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Population /Employment Catchment (10-mile radius)	173,733	154,442	700,000	700,000	500,000
	1	1	**3**	**3**	**2**
Maximize Connectivity and Accessibility.					
Intermodal Connection	Bus: Yes Metrolink: No Airport: No	Bus: Yes Metrolink: No Airport: No	The site has direct access to Mission Road, Andreason Drive, and a rail spur. It is located one mile from access to SR-78 and to I-15. It could be served by bus transit	The site has direct access to Centre City Parkway and to Valley Parkway. It is within 1/8 mile of Escondido Transit Center, and 0.25-mile from a rail spur. It is less than 0.7 mile from access to SR-78 or to I-15	The site has direct access to Scripps Ranch Blvd., and then to Mira Mesa Blvd. and to I-15. Rail access is at least 3 miles away. The site could be served by bus transit, and it is ¾ mile from a Park-and-Ride lot on Mira Mesa Boulevard
	3	1	**4**	**4**	**3**
Minimize Operating and Capital Costs.					
Length	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Operational Issues	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Construction Issues	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Evaluation Criteria	Station Options				
	Murrieta, I-15/I-215 Interchange	**Temecula/Murrieta Border**	**Escondido SR-78/ I-15 Interchange**	**Escondido Transit Center**	**Mira Mesa**
Capital Cost	Rural Station	Suburban Station	Urban Station	Urban Station	Suburban Station
Right-of-Way Issues/Cost	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Maximize Compatibility with Existing and Planned Development.					
Land Use Compatibility and Conflicts	Sensitive Uses: None	Sensitive Uses: None	The site cuts diagonally across the street grid, and would cause removal of 10 or more industrial or commercial buildings. How-ever, the area is designated for general industrial and planned industrial uses, and is within the boundaries of the Escondido Redevelopment Project	The site is oriented to the street grid, but would still impact several existing industrial and commercial operations. A City fire station is located immediately to the west of the site. The area is designated for Planned Industrial use and SPA #9. It is also within the Escondido Redevelopment Project boundaries	This site was vacant in 1999, but many new residences have been built in the vicinity since then. All now-vacant land is designated for future residential use. City of San Diego Planning Dept. personnel recommended that this station site be relocated to area near Miramar Comm-unity College, west of I-15
	5	**5**	**3**	**4**	**2**
Visual Quality Impacts	• Medium scale environment • No historical significance • Medium/high compatibility	• Medium scale environment • No historical significance • Medium/high compatibility	• Medium scale environment • No historical significance • Medium/high compatibility	• Medium scale environment • No historical significance • Medium/high compatibility	• Medium scale environment • No historical significance • Medium/high compatibility
	4	**4**	**4**	**4**	**4**
Minimize Impacts on Natural Resources					
Water Resources	See discussion in alignment tables (Murrieta to Mira Mesa)				
	5	**4**	**5**	**5**	**5**
Floodplain Impacts	See discussion in alignment tables (Murrieta to Mira Mesa)				
	5	**5**	**3**	**3**	**3**

Evaluation Criteria	Station Options				
	Murrieta, I-15/I-215 Interchange	**Temecula/Murrieta Border**	**Escondido SR-78/ I-15 Interchange**	**Escondido Transit Center**	**Mira Mesa**
Wetlands	None	- RI at Murrieta Creek	None	None	None
	3	**4**	**5**	**5**	**4**
Threatened and Endangered Species Impacts	• Potential impacts on Stephen's Kangaroo Rat • Constraint Level = Low/Moderate	• Potential impacts on Stephen's Kangaroo Rat • Constraint Level = Low/Moderate	• No potential impacts • Constraint Level = Low	• No potential impacts • Constraint Level = Low	• Potential California gnatcatcher habitat and other T and E species associated with Coastal Sage Scrub habitat. • High impacts if T and E species present. • Constraint Level = Moderate/High
	4	**4**	**5**	**5**	**3**
Minimize Impacts on Social and Economic Resources.					
Environmental Justice Impacts (Demographics)	Low-Mod Area: N High Minority: Y Both LM/Minority: N	Low-Mod Area: N High Minority: Y Both LM/Minority: N	None anticipated.	None anticipated from the station site, but there could be some associated with the route through Escondido	None anticipated.
	3	**2**	**5**	**3**	**5**
Farmland Impacts	None	None	None	None	None
	5	**5**	**5**	**5**	**5**
Minimize Impacts on Cultural Resources.					
Cultural Resources Impacts	None	None	None	None	None
	5	**5**	**5**	**5**	**5**
Parks and Recreation/ Wildlife Refuge Impacts	No impacts	No impacts	None	None	None
	5	**5**	**5**	**5**	**5**

Evaluation Criteria	Station Options				
	Murrieta, I-15/I-215 Interchange	**Temecula/Murrieta Border**	**Escondido SR-78/ I-15 Interchange**	**Escondido Transit Center**	**Mira Mesa**
Maximize Avoidance of Areas with Geologic and Soils Constraints.					
Soils/Slope Constraints	• Soils consist of alluvium and older lake deposits • Slope with a 2:1 ratio can be constructed • Low potential for landslide	• Soils consist of alluvium and older lake deposits • Slope with a 2:1 ratio can be constructed • Low to moderate potential for landslide	• Soils consist primarily of nonmarine, marine, and terrace deposits • Slope can be constructed with a 2:1 ratio, in general • Low potential for landslide	• Soils and bedrock consist of older lake deposits and granitic rock • Slope can be constructed with a 2:1 ratio, in general. Steeper slope may be feasible • Moderate potential for landslide	• Soils consist primarily of nonmarine, marine, and terrace deposits • Slope can be constructed with a 2:1 ratio, in general • Low potential for landslide
	4	**4**	**4**	**3**	**4**
Seismic Constraints	• Moderate potential for liquefaction • One major fault zone between Paoma Valley (to the north) and Temecula • (to the south) runs through the station: • Elsinore Fault (Type B, MG MAX = 6.8) • Moderate to high potential for surface rapture at the fault location • Detail investigation recommended for the potential impact of the fault on the station	• Low to moderate potential for liquefaction	• Low to moderate potential for liquefaction	• Low to moderate potential for liquefaction	• Low to moderate potential for liquefaction
	3	**4**	**4**	**4**	**4**
Maximize Avoidance of Areas with Potential Hazardous Materials.					
Hazardous Materials/Waste Constraints	No sites	No sites	No sites	No sites	No sites
	5	**5**	**5**	**5**	**5**

1 2 3 4 5
Least Favorable Most Favorable

CALIFORNIA HIGH-SPEED RAIL AUTHORITY
U.S. Department of Transportation
Federal Railroad Administration

Table 2-H-19 continued
Los Angeles to San Diego via Inland Empire High-Speed Train Station Evaluation Matrix
Kearny Mesa to Qualcomm Stadium

Station = Station Carried Forward **Station** = Station Eliminated = Primary or Secondary Reason for Elimination

Evaluation Criteria	Station Options[1]	
	Kearny Mesa near Montgomery Field	**Qualcomm Stadium**
Travel Time	Not Applicable	Not Applicable
Length	Not Applicable	Not Applicable
Population /Employment Catchment	1.2 million	1.2 million
	3	**3**
Maximize Connectivity and Accessibility.		
Intermodal Connection	The site has direct access to Convoy St., Kearny Mesa Road, and Linda Vista Road. Access to the freeway system is within one mile. The site could be served by bus. Montgomery Field is less than 1 mile away. However, the nearest rail access is 3.6 miles away, near I-5.	The site has direct access to Friars Road, San Diego Mission Road, and Mission Village Dr. Access to I-15 is 0.25-mile away. The site is served by the Trolley, and by bus. Montgomery Field is within 3 miles.
	4	**4**
Minimize Operating and Capital Costs.		
Length	Not Applicable	Not Applicable
Operational Issues	Not Applicable	Not Applicable

[1] Other station options at University Towne Centre, University City, San Diego Airport, and downtown San Diego are addressed in the Los Angeles to San Diego via Coast (LOSSAN) region.

Evaluation Criteria	Station Options[1]	
	Kearny Mesa near Montgomery Field	**Qualcomm Stadium**
Construction Issues	Not Applicable	Not Applicable
Capital Cost	Suburban Station	Terminal Station
Right-of-Way Issues/Cost	Not Applicable	Not Applicable
Maximize Compatibility with Existing and Planned Development.		
Land Use Compatibility and Conflicts	The site would result in removal of 0.25 mile of commercial/ industrial uses, including 2 office buildings. With underground station location, potential conflicts with Convoy St. and transmission line along I-805 would be minimized.	The proposed site would result in a loss of parking at Qualcomm Stadium, and also re-move a commercial office building from the south side of San Diego River. The later could be mitigated by moving the site 0.1 mile north. Loss of parking could be mitigated by parking structures. The site could also conflict with the existing Trolley line unless carefully sited
	4	**4**
Visual Quality Impacts	Large scale environment No historical significance High compatibility	Large scale environment No historical significance High compatibility
	5	**5**
Minimize Impacts on Natural Resources.		
Water Resources	SEE DISCUSSION IN ALIGNMENT TABLES (Mira Mesa–San Diego)	
	5	**4**
Floodplain Impacts	SEE DISCUSSION IN ALIGNMENT TABLES (Mira Mesa–San Diego)	
	3	**3**

Evaluation Criteria	Station Options[1]	
	Kearny Mesa near Montgomery Field	**Qualcomm Stadium**
Wetlands	None	None
	5	**5**
Threatened and Endangered Species Impacts	No or very low potential for habitat. Constraint Level = Low	Possible T and E species habitat impacts associated with Murphy Canyon Constraint Level = Low/Moderate
	5	**4**
Minimize Impacts on Social and Economic Resources.		
Environmental Justice Impacts (Demographics)	None anticipated.	None anticipated
	5	**5**
Farmland Impacts	None	None
	5	**5**
Minimize Impacts on Cultural Resources.		
Cultural Resources Impacts	None	None
	5	**5**
Parks and Recreation/Wildlife Refuge Impacts	None	None
	5	**5**
Maximize Avoidance of Areas with Geologic and Soils Constraints		
Soils/Slope Constraints	• Soils consist primarily of non-marine, marine, and terrace deposits • Slope can be constructed with a 2:1 ratio, in general • Low potential for landslide	• Soils consist primarily of non-marine, marine, and terrace deposits • Slope can be constructed with a 2:1 ratio, in general • Low potential for landslide
	4	**4**
Seismic Constraints	Low to moderate potential for liquefaction	Low to moderate potential for liquefaction
	4	**4**

Evaluation Criteria	Station Options[1]	
	Kearny Mesa near Montgomery Field	**Qualcomm Stadium**
Maximize Avoidance of Areas with Potential Hazardous Materials		
Hazardous Materials/Waste Constraints	**No sites**	**No sites**
	5	**5**

1 2 3 4 5
Least Favorable **Most Favorable**